

means for pumping each of a plurality of reagent-mixture components in a respective stream at a respective predetermined flow rate;

means for introducing at least one reagent-mixture component stream into a stream of at least one other reagent-mixture component stream for mixing [to mix] the plurality of reagent-mixture components [and create a reagent mixture] into a combined reagent-mixture stream;

means for forming each of a plurality of different selected reagent mixtures in the combined reagent-mixture stream by adjusting the flow rate of at least one of a plurality of reagent-mixture components in accordance with a flow-rate ratio of reagent-mixture components corresponding to each respective selected reagent mixture;
and

means for at least one of (i) chemically analyzing and (ii) analyzing a particle distribution of the selected [analyzing the] reagent mixture of the combined reagent-mixture stream.

3. (Amended) An apparatus as defined in claim 1 [2], wherein the means for pumping includes a plurality of pumps, each pumping a respective reagent-mixture component, and the means for forming each of a plurality of different selected reagent mixtures [adjusting the mixture ratio] is coupled to and controls the flow rate of each pump to, in turn, control the flow rate of at least one of the plurality of reagent-mixture components in accordance with the flow-rate ratio of the reagent-mixture components corresponding to a selected reagent mixture.

31. (Amended) A method for at least one of particle and chemical analysis of reagent mixtures having a plurality of reagent-mixture components, comprising the steps of:

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pumping each of a plurality of reagent-mixture components in a respective stream at a respective predetermined flow rate;

introducing at least one reagent-mixture component stream into [a stream of] at least one other reagent-mixture component stream to mix the plurality of reagent-mixture components and create a combined reagent-mixture stream;

forming each of a plurality of different selected reagent mixtures in the combined reagent-mixture stream by adjusting the flow rate of at least one of a plurality of reagent-mixture components in accordance with a respective flow-rate ratio of reagent-mixture components forming each selected reagent mixture; and

analyzing the components of [the] each selected reagent mixture.

33. (Amended) A method as defined in claim [32] 31, wherein [the] each flow-rate ratio of the reagent-mixture components is [substantially] approximately equal to the mixture ratio of the respective reagent mixture.

34. (Amended) A method as defined in claim 31, further comprising the steps of creating a database [of] including a plurality of predetermined reagent-mixture ratios, wherein each reagent-mixture ratio corresponds to one or more species, and creating a reagent mixture for [a] each of a plurality of selected species by pumping the reagent-mixture components of the [respective] reagent-mixture ratio for [the] a selected species at a flow-rate ratio corresponding to the respective reagent-mixture ratio.

35. (Amended) A method as defined in claim 34, wherein the flow-rate ratio is [substantially] approximately equal to the respective reagent-mixture ratio for [the] each selected species.

36. (Amended) A method as defined in claim 31, further comprising the step of directing the plurality of reagent-mixture components in the combined reagent-mixture stream through a tortuous path to facilitate mixing the reagent-mixture components into [the] a selected reagent mixture.

37. (Amended) A method as defined in claim 31, further comprising the step of accelerating and decelerating the flow rate of the reagent-mixture components in the combined reagent-mixture stream to facilitate mixing the reagent-mixture components into [the] a selected reagent mixture.

38. (Amended) A method as defined in claim 31, further comprising the step of directing the combined reagent-mixture stream [components] through a flow path defined by relatively expanded and relatively constricted portions to facilitate mixing the reagent-mixture components into [the] a selected reagent mixture.

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39. (Amended) A method as defined in claim 31 for hematology testing and analyzing particle distributions within the reagent mixtures for blood cell analysis, [wherein the] comprising the steps of pumping a plurality of reagent-mixture components [are] selected from the group including (i) a whole blood sample of a selected species, (ii) diluent, and (iii) a lysing agent, [to make] and forming a blood/diluent/lyse reagent mixture corresponding to the selected species.

42. (Amended) An apparatus for at least one of particle and chemical analysis of reagent mixtures having a plurality of reagent-mixture components, comprising:

means for pumping each of a plurality of reagent-mixture components in a respective stream at a respective flow rate;

means for introducing at least one reagent-mixture component into a stream of at least one other reagent-mixture component to mix the plurality of reagent-mixture components into a combined reagent-mixture stream, said means including:

an elongated mixing chamber defining an upstream end, a downstream end, and an elongated axis extending between the upstream and downstream ends,

a first inlet port located at the upstream end of the mixing chamber and coupled in fluid communication with the pumping means, and defining a first inlet axis for introducing a first reagent-mixture component stream into the mixing chamber along the first inlet axis,

a second inlet port located downstream of the first inlet port and coupled in fluid communication with the pumping means, and defining a second inlet axis for introducing a second reagent-mixture component stream into the mixing chamber along the second inlet axis, wherein one of the first and second inlet axes is inclined at an acute angle relative to the other and the elongated axis for introducing the respective reagent-mixture component stream into the mixing chamber in a different flow direction than the other reagent-mixture component stream to thereby create turbulence in the combined reagent-mixture stream, and

an outlet port located downstream of the inlet ports for receiving the combined reagent-mixture stream; and

means coupled in fluid communication with the outlet port for at least one of (i) chemically analyzing and (ii) analyzing a particle distribution of the combined reagent-mixture stream.

Please add the following new claim:

44. (New) An apparatus as defined in claim 42, further comprising means for forming each of a plurality of different selected reagent mixtures in the combined reagent-mixture stream by adjusting the flow rate of at least one of a plurality of reagent-